

DRBC 106 Mid-Year Report 2019

EPA Received First Draft: 07/31/2019

Comments to DRBC: 08/21/2019

**Administrative**

- Please submit 2020 Task Table and Application

Revisions in response to comments underway and will be submitted shortly.

- Please submit revised Eutrophication Model QAPP with EPA's comments integrated

Revisions underway – revised QAPP will be submitted prior to November 1, 2019.

**Nutrients**

- Please remove Katie Bentley from 'Enhanced Bacterial Monitoring, Zones 3 and Upper 4'

Done

- If DRBC continues to monitor low-flow conditions, EPA recommends removing the language in the commitment that specifically targets high flow events for future workplan iterations

Hydrologic conditions changed substantially toward the latter half of 2019. A range of flows have now been sampled.

- Elaborate on how the sensor data is being used in the eutrophication model

Nitrate spectral analyzer data collected at the Delaware River at Trenton will allow us to accurately load nitrate into the model. Nitrate spectral analyzer data collected at the Delaware River at Chester will allow us to tune the model to ensure that the model is accurately simulating nitrate concentrations within the model domain, at a location showing the among the highest variability in nitrate concentrations.

- Please clarify how the Phytoplankton Identification and enumeration data will be used in the development of the Eutrophication model both at the current level of "brief analysis" that the Academy of Natural Sciences is performing and at the level of "additional, more detailed, analysis" if additional external funding is acquired.

Phytoplankton identification and enumeration data will allow us accurately represent phytoplankton dynamics within the model. By understanding what species are present when and where, we will be better able to establish the linkage between nutrient loads and system phytoplankton response.

**Monitoring/Assessment**

- DRBC appears to be on track with all of the water quality monitoring commitments outlined in the 2019 workplan. EPA's Field Service Branch may be able to assist DRBC with monitoring efforts (e.g., boat usage) if the need arises.

DRBC appreciates the offered assistance.

- While developing the 2020 workplan, EPA encourages DRBC to consider continue evaluating the benefits of using PADEP's semi wadeable bioassessment methodology to assess biological health of the non-tidal Delaware River. Using PADEP's methodology will enable sharing of bioassessment data between PADEP and the Commission and allow for more robust assessments of the aquatic life use of the non-tidal Delaware River.

DRBC is in the process of reviewing its biological monitoring methodology. One modification we are considering is adopting the PA SWIMMI method. In 2018, the Academy of Natural Sciences performed a review of our biological monitoring program and concluded that minor modifications could be made to the DRBC methodology to make the DRBC data compatible with the SWIMMI index. We plan to have a subgroup of our Water Quality Advisory Committee review the Academy report and endorse any potential changes.

## **Water Quality**

- EPA continues to offer support on any technical or policy issue that may arise

DRBC appreciates the offered assistance.

- EPA appreciates Delaware River Basin Commission (DRBC) continued progress on developing nutrient criteria in the Delaware River, Estuary, and Bay. The revised DRBC Nutrient Criteria Plan (NCP Version 3 dated November 30, 2017) proposed using the under-development Delaware Estuary Eutrophication model (DEEM) to develop, propose, and implement criteria for ambient nitrogen and phosphorus in the Delaware Estuary. Under this proposal, the model would help define the ambient concentrations and species of nitrogen and phosphorus need to achieve new improved dissolved oxygen (DO) targets. Thus, under this approach, the nitrogen and phosphorus criteria assumed be driven by DO endpoints. However, other important impacts of elevated nutrients are not tied to DO from current knowledge. Therefore, setting nutrient criteria based solely on DO may not address other estuary ecological impacts from nutrients.
- EPA acknowledges DRBC has issued Task Order 6 (TO-6, August 16, 2017) to the Academy of Natural Sciences of Drexel University (ANSDU) to support the DRBC's better understanding of the characteristics of non-DO nutrient endpoints that would likely to be more or less stringent in setting the proposed nutrient species criteria. EPA appreciates DRBC's efforts to enter the TO-6 agreement with ANSDU (in addition to the Task E6 Water Quality Model Development and Calibration with DRBC available resources and staff workloads), and all other tasks specified to achieve the higher attainable estuary DO criteria per this revised nutrient criteria plan.
- However, DRBC Resolution 2017-4 specifies a 3.5-year timeline for completion of attainability analysis and final rulemaking within a 6-year timeframe. Hence, EPA has major concern about the timeline for each task regarding the proposed twelve tasks (E1 through E12) and two tasks (N1

and N2) in the revised Nutrient Criteria Plan for the entire Delaware River and Bay. EPA considers that timeline is the most critical issue for DRBC to develop the DEEM and to complete all proposed tasks to gain sufficient science and engineering information for upgrading its acute and chronic nutrient and DO water quality criteria, including but not limited to magnitude, frequency and duration components with numeric criteria (Chapter 3.5.1, WQS Handbook, EPA's 1985 Aquatic Life Guidelines) and the existing and anticipated assimilative capacities with various proposed nutrient and DO criteria, to protect the existing and designated aquatic life uses in the water quality zones 3, 4, and upper 5 (i.e., the 38-mile reach of the tidal estuary zone).

- In summary, though the NCP addresses the development of nutrient criteria in two reaches of the Delaware River and Bay: tidal reach (from RM 0 through RM 133.4) and non-tidal reach (from RM 133.4 to RM 330.7), if DRBC current resources are limited to the numeric nutrient criteria development for both reaches, EPA recommends DRBC to focus on the tidal reach and the regulatory water quality standards first due to the expected timeframe and mission-driven water quality improvement goal addressed by both the Resolution 2017-4 (DRBC, September 2017) and the EPA Nutrient Memorandum (USEPA, September 22, 2016). The proposed timelines for the revised numeric nutrient criteria would be completed by December 2024 (for tidal Estuary) and July 2025 (for non-tidal Delaware River) that are slightly later than the time frame addressed in the Resolution 2017-4. EPA appreciates DRBC's commitment to its available resources and staff workloads to meet all timelines of tasks in the NCP as expeditious as possible.

This is in response to the above 4 bullets regarding the Nutrient Criteria Plan. DRBC received a new set of comments from EPA dated September 17, 2019 regarding the Nutrient Criteria Plan. In addition, we received substantial feedback on the 2017 plan at a Water Quality Advisory Committee meeting on September 30, 2019. It seems likely that some modification to the 2017 plan, establishing stronger linkage to designated uses, is appropriate. DRBC's obligations under Resolution 2017-4 must be met and we fully intend on meeting these deadlines. We have an upcoming Water Quality Advisory Committee meeting scheduled for November 14, 2019 during which we will revisit the Nutrient Criteria Plan.

## Permits

- EPA appreciates DRBC's status update and has no questions or concerns